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EXAMINER	
HO, THOMAS M	

ART UNIT	PAPER NUMBER
2132	

DATE MAILED: 08/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/521,424	WAKAO ET AL.	
	Examiner	Art Unit	
	Thomas M. Ho	2134	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *23 May 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *38-42,45-50,53-58,61-66 and 69-73* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *38-42,45-50,53-58,61-66 and 69-73* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

KAMBIZ ZAND
PRIMARY EXAMINER

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 38-42, 45-50, 53-58, 61-66, 69-73 are pending.

Response to arguments

The Applicants have argued on pages 10-11 of the remarks:

Applicants submit that the cited art fails to disclose or suggest at least the above-mentioned features. In particular, Applicants submit that Natarajan fails to disclose or suggest at least the features of performing a predetermined calculation using an encoded digital image and confidential information, and then generating additional data by applying a one-way function to a result of the predetermined calculation. Instead, that patent discloses performing a one way hash function on a digital object to obtain a message digest M. (Col 4, lines 27-30), and then encrypting the message digest M using a private key. Col. 4, lines 62-65.

Thus, just like the conventional system discussed in the background of Applicant's specification, Natarajan first applies a hash function and then performs encryption on the result of the hash function.

The Examiner asserts that the one way hash function calculation unit of Natarajan corresponds to the claimed calculation unit and that the confidential information corresponds to the private key.

In light of the Applicant's amendments to the claims however, the Examiner has remapped the elements within the Applicant's claim to the elements of Natarajan. In light of the amendments, the Examiner for the purposes of examination now considers the calculation unit to be the combination of the one way hash function generating unit and the encryption key signature unit(items 100 and 104), which accepts a digital image as input, and performs both a one way hash function and an encryption with a private key upon the image. The image is then further processed by the watermark derivation unit, Items 106, et seq. , to create the watermarked object.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 38, 39, 40, 41, 42, 45-47, 50, 53 –55, 58, 61- 63, 66, 69- 70, 73 are rejected under 35 U.S.C. 102(e) as being anticipated by Natarajan, US patent 6611599.

In reference to claim 38:

Natarajan (Figure 1) discloses an apparatus for generating additional data used for checking whether an encoded digital image is changed or not, the apparatus comprising:

- A calculation unit adapted to perform a predetermined calculation using the encoded digital image and confidential information, where the calculation unit is the combination of the one way has function unit (Item 100) and the encryption key signature unit (Item 104), and the predetermined calculation is the encrypted message digest, and the confidential information is the private key. (Column 4, lines 60- Column 6, line 25)
- A generating unit coupled to said calculation and adapted to generate the additional data by applying a one way function to a result of the predetermined calculation, where the generating unit generates(derives) the digital watermark from the encrypted hash. (Item 106) (Column 5, lines 55- Column 6, line 34) & (Figure 1). The Examiner has considered the processing performed by Items 106 et. seq. to derive the digital watermark as elaborated on in (Column 5, lines 55- Column 6, line 34) to be construed as the one-way function that is applied. The provide support for this mapping, US patent 6209092 (abstract) discloses that in the art, the functions used to derive watermark functions may be considered "one-way functions"

The supplemental information also includes a control pattern, the watermark being generated by applying a one-way function to such control pattern. This has the advantage that any alteration of the watermark or the control pattern can be detected easily, because it is not computationally feasible to calculate a new control pattern for an altered watermark. Therefore, the supplemental information is well protected against unauthorized manipulation. An attempt to fully replace the watermark pattern will affect the quality of reproduction of the content information. In a copy control method allowing a first generation copy ("copy-once"), the original control pattern is processed several times by the one-way function for

generating the watermark. Each player or recorder processes the control pattern once before outputting/recording it, thus forming a cryptographically protected down-counter.

- A recording unit adapted to record the encoded digital image with the additional data on a recording medium, where the recording unit is the apparatus the records the encoded digital image, and where the information and image that is generated is stored on a recording medium such as a memory or hard drive. (Column 5, lines 55- Column 6, line 25) & (Column 10, lines 45-67)

In reference to claim 39:

Natarajan (Figures 1 & 2) discloses an apparatus for checking whether an encoded digital image is changed or not, the apparatus comprising:

- An inputting unit adapted to input the encoded digital image with first additional data used for checking whether the encoded digital image is changed or not, where the image is detected to see if it has been tampered with. (Column 3, lines 50-63)
- A calculation unit adapted to perform a predetermined calculation using the encoded digital image and confidential information, where the encoded digital image has performed with it, a digital hash to create a message digest, and the confidential information is the private key (Column 4, lines 60- Column 6, line 34)
- A generating unit coupled to said calculation unit and adapted to generate second additional data by applying a one-way function to a result of the predetermined

calculation and a one-way function, where the predetermined calculation is the encrypted message digest(Figure 1), where the second additional data that is generated is the derivation of the digital watermark from the message digest (Column 4, lines 25-52)) & (Column 5, lines 55- Column 6, line 34)

- Wherein said apparatus is adapted to check whether the encoded digital image is changed or not using the first additional data and the second additional data, where the watermark is used to detect if any changes or tamperings have been made to the digital file and where such detection uses the digital hash and/or watermark. (Column 3, lines 50-63) & (Column 4, lines 25-52)

In reference to claim 40:

Natarajan (Figure 1) discloses a method for use in an apparatus which generates additional data used for checking whether an encoded digital image is changed or not, the method comprising steps of:

- Performing a predetermined calculation using the encoded digital image and confidential information, where the predetermined calculation is the message digest that is encrypted and the confidential information is the private key (Column 4, lines 60- Column 6, line 34)
- Generating the additional data by applying a one-way function to a result of the predetermined calculation and a one-way function, where the additional data generated is the watermark that is derived from the digital hash. (Column 5, lines 55- Column 6, line 34) & (Figures 1 & 2)

- Recording the encoded digital image with the additional data on a recording medium, where the information and image that is generated is stored on a recording medium such as a memory or hard drive. (Column 5, lines 55- Column 6, line 34) & (Column 10, lines 45-67)

In reference to claim 41:

Natarajan (Figures 1 & 2) discloses a method for use in an apparatus which checks whether an encoded digital image is changed or not, the method comprising the steps of:

- Inputting the encoded digital image with first additional data used for checking whether the encoded digital image is changed or not, where the inputted additional data is the watermark and digital signature. (Column 4, lines 60- Column 6, line 34)
- Performing a predetermined calculation using the encoded digital image and confidential information, where the encoded digital image has performed with it, a digital hash to create a message digest. (Column 4, lines 25-52) & (Column 5, lines 55- Column 6, line 34)
- Generating second additional data by applying a one-way function to a result of the predetermined calculation and a one-way function, where the second additional data that is generated is the derivation of the digital watermark from the message digest(which is a one way function (Column 4, lines 25-52)) & (Column 5, lines 55- Column 6, line 34)
- Checking whether the encoded digital image is changed or not using the first additional data and the second additional data.

In reference to claim 42:

Natarajan (Figures 1 & 2) discloses an apparatus according to claim 38, wherein the additional data is also used for checking integrity of the encoded digital image, where the integrity of the image is checked with the verification of the digital signature and watermark. (Column 4, lines 60- Column 6, line 34) & (Column 1, line 30 – Column 2, line 26, background of watermarks)

In reference to claim 45:

Natarajan discloses the apparatus according to claim 38, wherein the confidential information is information unique to the apparatus, where the confidential information is the private key, and the private key is unique to the user and the systems he/she operates. (Column 4, line 60 – Column 5,line 64)

In reference to claim 46:

Natarajan discloses an apparatus according to claim 38, wherein the confidential information is information unique to an external apparatus connected to the apparatus, where the confidential information is the private key, and the private key is unique to the user and the systems he/she operates. (Column 4, line 60 – Column 5,line 64)

In reference to claim 47:

Natarajan discloses an apparatus according to claim 38, wherein the confidential information includes first information unique to the apparatus, and second information unique to an external apparatus connected to the apparatus, where the confidential information is the private key, and

the private key is unique to the user and the systems he/she operates, and where the second information unique is the digital signature. (Column 4, line 60 – Column 5,line 64)

In reference to claim 50:

Natarajan discloses an apparatus according to claim 39, wherein the first and second additional data is also used for checking integrity of the encoded digital image, where the first and second additional data is the watermark and the digital hash, which are used to check if an image has been tampered with, ie, checking the "integrity" of an image. (Column 1, lines 30 – Column 2, line 26, describing the background and function of digital watermarks) & (Column 2, lines 28-50) & (Column 3, lines 53 – 67) & (Column 4, line 60 – Column 5, line 15)

Claims 53 –55, 58 are substantially similar to claims 45-47, 50 and are rejected for the same reasons as claims 45-47, 50 respectively.

Claims 61- 63, 66 are substantially similar to claims 45-47, 50 and are rejected for the same reasons as claims 45-47, 50 respectively.

Claims 69- 70, 73 are substantially similar to claims 45-47, 50 and are rejected for the same reasons as claims 45-47, 50 respectively.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 48, 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Natarajan, US patent 6611599.

In reference to claim 48:

Natarajan fails to explicitly disclose the apparatus of claim 38, wherein the apparatus is an apparatus which operates as a digital camera but does disclose the apparatus used may be a digital apparatus of some kind. (Column 10, lines 43-67)

The Examiner has taken as admitted prior art that digital cameras was known to those of ordinary skill in the art at the time of invention.

Digital cameras are common consumer devices, the product of a multibillion dollar market. Advanced cameras such as the Canon 20d, have security features which allow images to indicate if they have been tampered with. This was also the invention of the previously cited art, Friedman US patent 5499294.

It would have been obvious to one of ordinary skill in the art at the time of invention to have the apparatus be a digital camera in order to provide security features for the image in camera, raising security by providing a tamperproof system prior to the image being moved to a computer.

In reference to claim 49:

Natarajan fails to explicitly disclose the apparatus according to claim 38, wherein the apparatus is an apparatus which operates as a scanner but does disclose the apparatus used may be a digital apparatus of some kind. (Column 10, lines 43-67)

The Examiner takes as admitted prior art that scanners were known to those of ordinary skill in the art at the time of invention.

It would have been obvious to one of ordinary skill in the art at the time of invention to have the apparatus be a digital camera in order to provide security features for the image after it has been scanned to increase security and decrease the opportunity for the image to be tampered with.

Claims 56, 57, 64, 65, 71, 72 are rejected for the same reasons as claims 48 and 49.

Conclusion

6. Any inquiry concerning this communication from the examiner should be directed to Thomas M Ho whose telephone number is (571)272-3835. The examiner can normally be reached on M-F from 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on **(571)272-3799**.

The Examiner may also be reached through email through Thomas.Ho6@uspto.gov

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-2100.

General Information/Receptionist	Telephone: 571-272-2100	Fax: 571-273-8300
Customer Service Representative	Telephone: 571-272-2100	Fax: 571-273-8300

TMH

August 6th, 2006

KAMBIZ ZAND
PRIMARY EXAMINER